claim amendments.

REMARKS

Claims 1-29 are pending in the subject. By this Amendment applicants have canceled claims 10,11,25-27 without prejudice or disclaimer, amended claims 1,2,20 and 24 and added new claims 30 and 31. Applicants maintain that the new claims and amendments to the claims raise no issue of new matter and that the new and amended claim is fully supported by the specification as originally filed. Support for amended claim 1 can be found in the specification as originally filed at page 1, lines 20-22. Support for amended claim 2 can be found in the specification as originally filed at page 1, lines 20-22. Support for amended claim 20 can be found in the specification as originally filed at page 3, lines 27-29. Claim 24 has merely been amended to refer to a carrier instead of a transfer factor. Support for new claim 30 can be found in the specification as originally filed at page 1, lines 20-24. Support for new claim 31 can be found in the specification as originally filed at page 1, lines 20-24. Applicants, therefore, respectfully request entry of this Amendment. Upon entry of this Amendment claims 1-9, 12-24 and 28-31 will be pending.

Claim Rejections under 35 U.S.C. §112, Second Paragraph.

In the October 19, 2001 Office Action the Examiner stated that claims 1-29 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner stated that claims 1-2 are vague and indefinite in that the metes and bounds of a transfer factor are not defined. The Examiner stated that claims are interpreted in

light of the specification, however, since transfer factors can be produced in response to different viruses, bacteria or even tumors, the claim should point out which specific transfer factor is intended in the said claims. The Examiner asked is this transfer factor an antigen specific?

In response, without conceding the correctness of the Examiner's position but in an effort to expedite examination, applicants have amended claims 1 and 2 to recite antigen-specific transfer factor.

The Examiner stated that claim 9 is vague and indefinite in that the metes and bounds of a carrier are not defined. The Examiner stated that the claim is interpreted in light of the specification, however, since there are many kinds of carriers in the art, the claim should point out which carrier is intended in the said claim.

In response, applicants note that claim 9 does not refer to a "carrier". Applicants assume Examiner actually means claim 10, where the term "carrier" is recited. Without conceding the correctness of the Examiner's position but in an effort to expedite examination, applicants have canceled claim 10.

The Examiner stated that claims 13-18 are unclear in that the metes and bounds of the "subject" are not defined. The Examiner stated that claims are in interpreted in light of the specification, however, the specification fails to teach what is the definition of the "subject". The Examiner asked applicants to specify the subject.

In response, without conceding the correctness of the Examiner's position but in an effort to expedite examination, applicants have

added new claims 30 and 31. Applicants maintain that in interpreting the term "subject" in claims 13-18, directed to treating a disease in a subject, it would be clearly understood by one of skill in the art that the subject is a mammal, specifically a human being e.g. see specification at page 1, lines 20-24, page 9 lines 26-30.

The Examiner stated that claims 13-18 and 29 are rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. The Examiner stated that the omitted steps are: what is the administering dosage and rout of administering and how to measure the clinical parameter in response to the treatment of Human Herpesvirus-6B transfer factor etc.

In response, applicants maintain that claims 13-18 and 29 are not indefinite and the claims clearly set forth the essential steps of the claimed invention. The administered dosage would be clearly understood by one of skill in the art from the claim terms reciting the amount of transfer factor that is effective to treat the disease in the subject. The specification clearly teaches such effective dosages e.g. see page 10, line 28 to page 12, line 20. Applicants also note that one of skill in the art would understand that a transfer factor can be administered to a subject via a number of routes, including orally as exemplified in the specification or intramuscularly e.g. see specification as page 10, lines 16-19. Applicants further note that treating a disease in a subject does not require the step of assessing the clinical progress of the disease i.e. measuring clinical parameters. The disease merely may be treated, and measuring such clinical parameters is not an essential step of the treatment but instead is

a means of assessing the treatment's efficacy.

The Examiner stated that claims 16-18 and 25-27 are vague and indefinite in that the metes and bounds of the abnormalities are not defined. The Examiner stated that claims are interpreted in light of the specification; however, the specification fails to teach what is the definition of abnormalities and what is the criterion for determine the abnormal and normal?

In response, applicants note that it would be understood by one of skill in the art that an abnormality is a disease, and the claims' terms make it clear that such diseases are delimited to those alleviated by enhancing the subject's immune response to HHV6A or 6B (such as Multiple Sclerosis and Chronic Fatigue Syndrome as shown in the specification at e.g. page 12 lines 5-20).

The Examiner stated that claim 24 is also vague for recitation of a relative word "capable of", because the capability of a compound or composition to perform some function is merely a statement of a latent characteristic of said compound or composition and said language carries no patentable weight. Therefore, the claims are regarded as indefinite.

In response, applicants have amended claim 24 to refer to a "carrier" that is membrane permeable. Membrane-permeability is not a latent characteristic of all carriers, but only of a subset of carriers, and the claim is directed to that subset of carriers.

The Examiner stated that claims 25-27 provide for the use of claims 1 and 2, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant

is intending to encompass. The Examiner stated that a claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

In response, without conceding the correctness of the Examiner's position but in an effort to expedite examination, applicants have canceled claims 25-27.

The Examiner stated that claims 25-27 are rejected under 35 U.S.C. §101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper claim under 35 U.S.C. §101. Se for example Ex parte Dunki, 153 USPQ 678 (Bd.App. 1967) and Clinical Products, Ltd. v. Brenner, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

In response, without conceding the correctness of the Examiner's position but in an effort to expedite examination, applicants have canceled claims 25-27.

Claim Rejections under 35 U.S.C. §102(b)

The Examiner stated that claims 1-2, 5-13 and 16-29 are rejected under 35 U.S.C. §102(b) as being anticipated by De Vinci et al. (Biotherapy 1996, Vol. 9, pp. 87-90). The Examiner stated that DeVinci et al. teach a method for treating patients suffering Chronic Fatigue Syndrome (CFS) with antigen specific transfer factor (TF), which is active against EBV, HHV-6 and CMV. One kind of TF is extracted from spleens of BALB/c mice immunized with EBV, CMV, and HHV-6 live virus, and then subsequently replicated in vitro using human lymphoblastoid cell lines. The Examiner stated

that, therefore, the claimed invention is anticipated by the cited prior art.

In response, applicants note that De Vinci et al. do not teach antigen specific transfer factor (TF) active against any specific Human Hepresvirus-6 (HHV6) species. DeVinci teach that (in a single patient) Chronic Fatigue Syndrome symptoms were relieved by a TF active against Epstein Barr Virus (EBV) and Human Herpesvirus (see page 88, columns 1 and 2). In contrast, applicant's claimed invention (see claims 1 and 2) is antigen specific TF, specifically active against HHV6A and/or HHV6B. Moreover, applicants' claimed invention has no requirement that the TF be active against EBV. Also De Vinci et al. do not teach a method of treating a disease with antigen specific TF active against any specific HHV species. In contrast, applicant's claimed invention (see claims 13, 16, 17, and 18) teaches a method of treating a disease with antigen specific TF active against HHV6A and/or HHV6B.

The Examiner stated that claims 1-2, 5-13 and 16-29 are rejected under 35 U.S.C. §102(b) as being anticipated by Ablashi et al. (Biotherapy 1996, Vol. 9, pp. 81-86). The Examiner stated that Ablashi et al. teach a method for treating patients suffering Chronic Fatigue Syndrome (CFS) with antigen specific transfer factor (TF), which is active against EBV, HHV-6 and CMV. The Examiner stated that the TF is extracted from spleens of BALB/c mice immunized wit EBV, CMV, and HHV-6 live virus, and then subsequently replicated in vitro using LDV/7 cells, a B-lymphoblastoid cell line (see entire document). The Examiner stated that, therefore, the claimed invention is anticipated by the cited prior art.

In response, applicants note that Ablashi et al. do not teach

antigen specific TF active against any specific HHV6 species. Ablashi et al. merely teach that (in a single patient) Chronic Fatigue Syndrome symptoms were relieved by a TF active against Cytomegalovirus, EBV and HHV6. In contrast, applicant's claimed invention teaches antigen specific TF active against HHV6A and/or HHV6B (see claims 1 and 2). Also Ablashi et al. do not teach a method of treating a disease with antigen specific TF active against any specific HHV6 species. In contrast applicant's claimed invention teaches a method of treating a disease with antigen specific TF active against HHV6A and/or HHV6B.

The Examiner also stated that claims 1-4, 10-12 and 16-29 are rejected under 35 U.S.C. §102(b) as being anticipated by Wilson (U.S. Patent No. 4,816,563). The Examiner stated that Wilson et al. teach that antigen specific extracted transfer factor (TF) can be obtained from colostrums or milk secreted by the mammary glad of a suitable lactating mammal, e.g. a cow having immunity to a specific antigen under suitable conditions. The Examiner also stated that he TF may then be used to prevent or treat the disease, can be incorporated into edible compositions into pharmaceutical or veterinary composition, and may be employed to confer immunity against diseases associated with a specific antigen to which the TF-producing animal is immunized. The Examiner further stated that the said antigen includes the herpetovirodae, such as herpes simplex virus, Newcastle's disease, Marek's disease etc (see abstract, summary of invention and claims 1-28). The Examiner stated that, therefore, the claimed invention is anticipated by the cited prior art.

In response, applicants note that Wilson et al. do not teach antigen specific TF active against any specific human herpes virus species, but merely TF active against Herpes Simplex Virus. There

are many members in the Herpes Simplex Virus genus and neither the HHV6, nor the HHV6A and HHV6B subspecies claimed by applicants are specified by Wilson et al. in the '563 patent. In contrast applicant's claimed invention teaches antigen specific TF active against HHV6A and/or HHV6B. Also Wilson et al. do not teach a method of treating Multiple Sclerosis or Chronic Fatigue Syndrome with antigen specific TF active against any specific HHV species. In contrast applicant's claimed invention teaches a method of treating a disease with antigen specific TF active against HHV6A and/or HHV6B. Also Wilson et al. do not teach a method of producing antigen-specific transfer factors specific for HHV6 species, nor the HHV6A and/or HHV6B subspecies claimed by applicants.

The Examiner also stated that claims 1-2, 5-12 and 16-29 are rejected under 35 U.S.C. §102(b) as being anticipated by Wilson (U.S. Patent No. 4,610,878). The Examiner stated that Wilson et al. teach several methods related to the preparation of antigen specific TF from dialyzed leukocyte extract and an in vitro assay for measuring quantitative parameter related to the clinical usage of TF in regarding to the host cellular immunity against specific antigen, to which the TF-producing animal is immunized (see the entire document). The Examiner stated that, therefore, the claimed invention is anticipated by the cited references.

In response, applicants note that Wilson et al. do not teach a method of producing antigen-specific transfer factors specific for the HHV genus, nor HHV6 species nor the HHV6A and/or HHV6B subspecies as claimed by applicants.

In conclusion, neither DeVinci et al., Ablashi et al., Wilson et al. '563 patent nor Wilson et al. '878 patent teach every element of each of applicant's rejected claims.

Claim Rejections under 35 U.S.C. §103(a)

The Examiner stated that claims 1-29 are rejection under 35 U.S.C. §103(a) as being unpatentable over Wilson et al. (Patent Nos. 4,816, 563, 4,610,878), Ablashi et al. (Biotherapy, 1996, Vol. 9, pp. 81-86) in view of Challoner et al. (P.N.A.S. 1995, Vol. 92, pp. 7440-7444).

The Examiner stated that the claimed invention is drawn to a Human Herpesvirus-6A and Human Herpesvirus-6B antigen specific transfer factor (TF) and method of using the TF for treatment of chronic fatigue syndrome (CFS) and multiple sclerosis as well as to enhance the immunity against the specific infectious agent infection, wherein the HHV antigen specific TF can be isolated from colostrums of a bovid or other immune system component, such as dialyzable leukocyte extract or immune organ lysate or cell or lymphoblastoid cell line extract.

The Examiner stated that Wilson et al. disclose the method for producing and testing as well as using the antigen specific TF from a colostrums or milk of a bovid (Patent '563), and leukocytes of infected patients (Patent '878), wherein the said TF is used for enhance the cellular immunity against specific antigens to which the TF-producing animal is immunized, such antigens include the large family of herpetoviridae, such as herpes simplex virus, Newcastle's disease, Marek's disease etc. The Examiner stated that although Wilson et al. did not teach that the HHV specific TF is used for the treatment of CFS or MS associated with the HHV infection, they clearly teach that the function of the antigen specific TF is to enhance the cellular immunity for treatment and prevention of the host against the specific infectious agent, to which the TF is specifically produced.

The Examiner also stated that Ablashi et al. teach a method for treating patients suffering Chronic Fatigue Syndrome (CFS) with antigen specific transfer factor (TF), which is active against EBV, HHV-6 and CMV. The Examiner stated that because the transfer factor can produce activity cross the species, injection of the isolated TF significantly alleviates the clinical symptom of the patients suffering from CFS caused by HHV-6 infection. The Examiner further stated that Ablashi et al. differ in that they did not use the TF factor to treat the patients suffering from the Multiple Sclerosis (MS) caused by HHV-6A or B infection.

In response, applicants maintain that the results disclosed in the specification are unexpected. Ablashi teaches that 1 of 2 patients suffering CFS treated with a general transfer factor for multiple viruses showed symptomatic relief. In contrast applicants show that 9 of 10 patients (90%) showed symptomatic relief when treated with transfer factors specific for HHV6A and HHV6B. Neither Ablashi et al. or Wilson et al. teach transfer factors specific for HHV6A and/or HHV6B. Also Wilson et al. does not teach how to produce antigen specific transfer factors specific for HHV6A and/or HHV6B.

The Examiner stated that Challoner et al. teach that the HHV-6 B infection is associated with patients suffering with MS. The Examiner stated that the major DNA binding protein gene of HHV-6 B were detected in 36 out of 37 patients' damaged brain tissue, which is the hall marker of the MS, they suggested that the HHV-6 infection is an etiology or pathogenesis of MS. The Examiner stated that, therefore, it would have been obvious for a person skilled in the art at the time the application was filed to be motivated to combine the teaching from all the references cited above and use the HHV-6A or B specific TF isolated from either the colostrums of an immunized cow or other immune system component, such as the mice

spleen cello or B-lymphoblastoid cells for treatment of the CFS and MS or in general for enhancing the immune response for patients suffering from the HHV-6A or B infection without any unexpected results. The Examiner stated that the claimed invention as a whole is prima facie obvious absence unexpected results

In response, applicants note that Challoner et al. teaches that HHV6B infection is associated with Multiple Sclerosis, not that Multiple Sclerosis may be treated by administering transfer factors specific for HHV6A and HHV6B to the subject. Furthermore, at the time of filing, there existed considerable disagreement in the prior art as to whether HHV6 has anything to do with the etiology or pathogenesis of Multiple Sclerosis; a review of the field is attached see **Exhibit 2**. A specific example of literature from the field disclaiming a role for HHV6 in Multiple Sclerosis is attached hereto as **Exhibit 3**. In light of the disagreement evident in the prior art it would not of been obvious to combine the teachings of Challoner et al. with Ablashi et al. or Wilson et al.

Applicants maintain that as Ablashi et al. and Wilson et al. do not teach transfer factors specific for HHV6A and HHV6B, and Challoner et al. does not teach that Multiple Sclerosis may be treated by conferring/enhancing a subject's immunity to HHV6A and HHV6B, and so the invention as claimed is not prima facie obvious.

No fee, other than the total enclosed fee of $73.00 including the $55.00 fee for a one-month extension of time and the $18.00 fee for extra claims presented, is deemed necessary in connection with the filing of this Amendment. If any other fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

2/19/02

John P. White
Reg. No. 28,678

Date

Marked up copy of Amendments to Claims

Claims 1,2,20 and 24 have been amended as follows:

--1. (Amended) [A] An antigen-specific transfer factor effective to confer cell-mediated immunity [wherein the immune response is] to Human Herpesvirus-6A and Human Herpesvirus-6B.--

--2. (Amended) [A] An antigen-specific transfer factor effective to confer cell-mediated immunity [wherein the immune response is] to Human Herpesvirus-6A or Human Herpesvirus-6B.--

--20. (Amended) [A] The composition of claim 19 [comprising the transfer factor of claim 1 or 2 and a carrier], wherein the carrier is a pharmaceutically acceptable carrier.--

--24. (Amended) The composition of claim 19, wherein the [transfer factor] carrier is capable of passing through a cell membrane.--